



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Olivia P. Zolfaghari	Project Number S0818
Project Title Robotic Technology in a Hospital Environment	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Question: Can robots be applied in the medical field so that they can deliver blood bags from laboratories to nursing stations within the hospital? Hypothesis: If the current methods used in today's hospitals do not sufficiently perform the transportation of blood from laboratories to nursing stations, then robots will properly deliver the blood in an easier and safer manner.</p> <p>Methods/Materials Bill of Materials: 7 chassis rails, 2 chassis bumpers, 4 motors, 4 2.75# tires, 2 60-tooth gears, 2 12 tooth gears, 2 84 tooth gears, 2 square bars, 4 36 tooth gears, 1 receiver antenna sleeve holder, 1 RF receiver module, 1 micro controller module, 2 long bars, 1 short bar, 4 square bars 3#, 4 long angle bars, 3 square bars, 12#, 5 gussets, 2 1/2# fully threaded beams, 2 2# partially threaded beams, 3 3# partially threaded beams, 1 limit switch, 3 zip tie, 2 pivots, 1 battery holder, 1 extension league, 3 line follower, 1 mounting bar, sufficient screws, nuts, collars, bearing flats, and spacers.</p> <p>Results Programed three digital pixel sensors on my robot to follow the given path. Robot can grab a blood bag and place it in an insulator, to deliver from laboratories to nursing stations.</p> <p>Conclusions/Discussion Supports my hypothesis and question. Robot can properly function by dispensing blood bags and following a given path from laboratories to nursing stations within hospital environment as a means of transportation.</p>	
Summary Statement Creation of robotic technology programmed to perform tasks within the hospital environment, primarily using the line tracking system.	
Help Received Mark Barglowski, the Lab Director at Los Robles Hospital, for preparing a blood bag with which my robot could demonstrate. In addition, Mrs. Usher, science teacher and director of the Robotics Club for staying after school supervising me while I was constructing in her room. Also, Mr. Usher, lab	